

Survey Procedures

Survey Procedures: Samples were drawn from the NASS List Sampling Frame. This extensive sampling frame covers all types of farms and accounts for about 82% of all land in farms in the U.S. Farms that were more likely to be producers of multiple crops of interest were more likely to be in the sample.

Estimation Procedures: The chemical application's data, reported by product name or trade name are reviewed within state and across states for reasonableness and consistency. This review compares reported data with manufacturer's recommendations and with data from other farm operators using the same product. Following this review, product information are converted to an active ingredient level. The chemical usage estimates in this publication consist of survey estimates of those active ingredients.

Bearing and non-bearing acreage estimates are primarily based on periodic orchard surveys. In non-survey years, acreage is based on trends, county extension service data, end of year production surveys and other indications. Bearing and non-bearing acres of pecans are not available due to the nature of harvesting Native and Seedling trees. The survey percentages are based on the respondents' consideration of area from which nuts were collected. Estimates of the total amount of active ingredient applied are based on the acreage estimates published in the annual NASS reports "Citrus Fruits - 1999 Summary" [Fr Nt 3-1(99)] released on September 23, 1999 and "Noncitrus Fruits and Nuts - 1999 Summary" [Fr Nt 1-3(00)] released on July 7, 2000. The estimates for total amount applied will not be revised even if there are subsequent revisions to acreage for a given crop.

Detailed data within a table may not multiply across or add down due to independent rounding of the published values.

Reliability: The probability nature of the survey provides expansion of data so that the estimates are statistically representative of chemical use on the targeted crops in the surveyed States. The reliability of these survey results are affected by sampling variability and non-sampling errors. The sampling variability, expressed as a percentage of the estimate, is referred to as the coefficient of variation (cv).

Non-sampling errors are errors that occur during a survey process, and unlike sampling variability, are difficult to measure. They may be caused by interviewers failing to follow instructions, poorly worded questions, non-response, problematic survey procedures, or data handling between collection and publication. In these surveys, all survey procedures and analysis were carried out in a consistent and orderly manner to minimize the occurrence of these types of errors.

Variability for estimates of acres treated will be higher than the variability for estimates of application rates. This is because application rates have a narrower range of responses, are recommended by the manufacturer of the product, and are generally followed.

Sampling variability of the estimates differed considerably by chemical and crop. In general, the more often the chemical was applied, the smaller the sampling variability. For example, estimates of use of a commonly used product, such as Sulfur, will exhibit less variability than a more rarely used product. For more commonly used chemicals, cv's will range from 1-30 percent at the U.S. level and 5-80 percent at the State level. Some rarer items will have cv's above 100 percent. These items have insufficient data for publication and these instances are noted.